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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/803,252
Filing Date: March 17, 2004
Appellant(s): GARGI, ULLAS

Roxana H. Yang
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 09/08/2008 appealing from the Office action mailed 04/09/2008

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

| 7,152,209 | Jojic et al. | 12-2006 |

6,907,570   Amir et al.   1-2005

6,144,964   Breese et al.   11-2000

.**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 7-18, 20-35, and 37-45 rejected under 35 U.S.C. 103(a) as being

unpatentable over Jojic et al. (US Patent 7,152,209) and Amir et al. (US Patent

6,907,570).

Regarding claim 1, Jojic et al. disclose a method for variable speed video

playback (column 2, lines 11-23), comprising: obtaining a set of scores for a plurality of

discrete segments in a digital video (column 24, lines 10-22); enabling a playback of

said digital video at a variable playback speed that may change from segment to

segment based on said set of scores (column 12, lines 13-22); receiving a user input to

adjust said playback speed for at least one of said segments by modifying at least one

of said set of scores (column 11, lines 50-53; column 28, line 66 – column 29, line 1);

and adjusting said variable playback speed based on said user input (column 12, lines

8-22; column 24, lines 10-23; column 24, lines 29-39).

However, Jojic et al. do not disclose adjusting including reversing said variable playback speed.

Amir et al. disclose reversing a variable playback speed (column 6, line 66 – column 7, line 4).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the reversing the variable playback speed disclosed by Amir et al. into the adjusting step disclosed by Jojic et al. in order to enhance the user interface of the method because if user wants to view backward, he or she doesn't have to start over from the beginning but instead it can be conducted at the current point.

Regarding claim 2, Jojic et al. also disclose said scores were computed based on one or more video analysis techniques applied to said segments (column 19, line 59 – column 20, line 26).

Regarding claim 3, Jojic et al. also disclose different ones of said video analysis techniques are given different weights in computing said set of scores (column 20, lines 3-56).

Regarding claim 4, Jojic et al. also disclose said weight for said video analysis technique is given prior to performing said video analysis technique (column 20, lines 3-56 – the function to calculate the likelihood is determined prior to performing the video analysis technique).

Regarding claim 5, Jojic et al. also disclose said weight for said video analysis technique is given after performing said video analysis technique (column 13, lines 24-27; column 20, lines 2-56; the number of blobs is inputted dynamically; the extra blobs

or reduced blobs have weights increased from zero to non-zero or from non-zero to zero, respectively).

Regarding claim 7, Jojic et al. also disclose adjusting includes increasing the weight of a video analysis technique if that technique substantially differentiates among said segments (column 21, lines 25-33).

Regarding claim 8, Jojic et al. also disclose said user input includes an instruction to modify said weight given to at least one of said video analysis techniques (column 13, lines 24-27; column 20, lines 2-56; the number of blobs is inputted dynamically; the extra blobs or reduced blobs have weights increased from zero to non-zero or from non-zero to zero, respectively).

Regarding claim 9, Jojic et al. also disclose said enabling includes playing a discrete segment of said digital video at a slower speed when said discrete segment has a high score relative to scores for other discrete segments of said digital video (column 24, lines 19-23).

Regarding claim 10, Jojic et al. also disclose said enabling includes playing a discrete segment of said digital video at a faster speed when said discrete segment has a low score relative to scores for other discrete segments of said digital video (column 24, lines 15-19).

Regarding claim 11, Jojic et al. also disclose said user input includes an instruction to dampen an effect of said set of scores on said variable playback speed (column 16, lines 41-49).

Regarding claim 12, Jojic et al. also disclose said user input includes an instruction to amplify an effect of said set of scores on said variable playback speed (column 16, lines 41-49).

Regarding claim 13, Jojic et al. also disclose said adjusting includes recalculating said variable playback speed based on said input (column 11, lines 50-53; column 28, line 66 – column 29, line 1; column 24, lines 10-23).

Regarding claim 14, Jojic et al. also disclose said user input includes setting a maximum playback speed (column 16, lines 41-49; by dragging the "slider bar 1350" in Fig. 13 up to the right most position).

Regarding claim 15, Jojic et al. also disclose said user input includes setting an average playback speed (column 16, lines 41-49; by dragging the "slider bar 1350" in Fig. 13 up to a mid-point position).

Claim 16 is rejected for the same reason as discussed in claim 1 above in further consideration of Jojic et al. also disclosing a user interface module configured to provide said user input to said video playback module (column 27, lines 45-51; "slider bar 1390" in Fig. 13).

Claim 17 is rejected for the same reason as discussed in claim 2 above.

Claim 18 is rejected for the same reason as discussed in claim 3 above.

Claim 20 is rejected for the same reason as discussed in claim 7 above.

Claim 21 is rejected for the same reason as discussed in claim 8 above.

Claim 22 is rejected for the same reason as discussed in claim 9 above.

Claim 23 is rejected for the same reason as discussed in claim 10 above.

Claim 24 is rejected for the same reason as discussed in claim 11 above.

Claim 25 is rejected for the same reason as discussed in claim 12 above.

Claim 26 is rejected for the same reason as discussed in claim 14 above.

Claim 27 is rejected for the same reason as discussed in claim 15 above.

Claim 28 is rejected for the same reason as discussed in claim 13 above.

Regarding claim 29, Jojic et al. also disclose an output device configured to display past and future discrete segments in one or more sliding windows (column 12, lines 27-50; column 38, lines 2-11, 18-29).

Regarding claim 30, Jojic et al. also disclose an output device configured to enable a user selection of one or more past and future discrete segments (column 12, lines 27-50; column 38, lines 2-11, 18-29).

Claim 31 is rejected for the same reason as discussed in claim 1 above.

Claim 32 is rejected for the same reason as discussed in claim 30 above.

Claim 33 is rejected for the same reason as discussed in claim 1 above.

Claim 34 is rejected for the same reason as discussed in claim 2 above.

Claim 35 is rejected for the same reason as discussed in claim 3 above.

Claim 37 is rejected for the same reason as discussed in claim 7 above.

Claim 38 is rejected for the same reason as discussed in claim 8 above.

Claim 39 is rejected for the same reason as discussed in claim 9 above.

Claim 40 is rejected for the same reason as discussed in claim 10 above.

Claim 41 is rejected for the same reason as discussed in claim 11 above.

Claim 42 is rejected for the same reason as discussed in claim 12 above.

Claim 43 is rejected for the same reason as discussed in claim 14 above.

Claim 44 is rejected for the same reason as discussed in claim 15 above.

Claim 45 is rejected for the same reason as discussed in claim 13 above.

Claims 6, 19, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jojic et al. (US Patent 7,512,209) and Amir et al. (US Patent 6,907,570) as applied to claims 1-5, 7-18, 20-35, and 37-45 above, and further in view of Breese et al. (US Patent 6,144,964).

Regarding claim 6, see the teachings of Jojic et al. as discussed in claim 3 above. However, Jojic et al. do not disclose reducing the weight of an analysis technique if that technique fails to substantially differentiate among said segments.

Breese et al. disclose a tuning technique that reduces the weight of the component that fail to substantially differentiate among other components (abstract).

One of ordinary skill in the art at the time the invention was made would have been motivated to incorporate the tuning technique disclosed by Breese et al. into the method disclosed by Jojic et al. to enhance the accuracy of the method.

Claim 19 is rejected for the same reason as discussed in claim 6 above.

Claim 36 is rejected for the same reason as discussed in claim 6 above.

(10) Response to Argument

A. Claims 1-5, 7-18, 20-35, and 37-45 Are Unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 7,152,209, to Jojic et al. ("JOJIC") in view of U.S. Patent No. 6,907,570, to Amir et al. ("AMIR")

1. Claim 1

On page 14, Appellant argues that "the Examiner has completely misunderstood the meaning of the element "adjusting including reversing said variable playback speed based on said user input.""

In response, the Examiner respectfully disagrees.

At column 11-23, JOJIC states, "[a] user interface (UI) for adaptive video fast forward, as described herein, provides a novel <u>fully adaptive content-based UI</u> for allowing user interaction with an "image sequence analyzer" for analyzing image sequences <u>relative to a user identified query sample</u>. This query sample is drawn either from an image sequence being searched or from another image sequence entirely. The interaction provided by the image sequence analyzer UI <u>provides a user with computationally efficient searching, browsing, and retrieval of one or more objects, frames or sequences of interest in video or image sequences, as well as automatic content-based variable-speed playback based on a computed similarity to the query sample</u>."

The underlined segments or phrases above are clear enough to be understood as this is a method for variable speed video playback based on user's preferences or interests.

More specifically, the variable speed is adaptive and adjusted so that a slower speed is selected for playback in those segments that are familiar or close to user's interest and a faster speed is selected for playback in those segments that are irrelevant or not of user's interests ("the user is provided with the capability to quickly view an entire video sequence, with only those portions of interest to the user being played in a

normal or near normal speed", at column 12, lines 11-15 and "the playback speed automatically increases and decreases in response to the computed similarity of the current image frames," at column 12, lines 18-20). In other words, each of various segments or portions of the video stream will have a computed similarity showing how similar it is to user's interests. Generally, different segments or portions will have different levels of computed similarity represented by different comparison results of comparing different "likelihood" data with a similarity threshold (see column 23, lines 40-43, 57-60), which collectively correspond to "a set of scores for a plurality discrete segments."

As further described at least at column 24, lines 11-22, which states, "the learned generative models described above were used to create an image frame similarity-based intelligent fast forward application. In general, the approach to intelligent image or video fast forwarding is based on using the likelihood of the current frame under the generative model to control the playback speed. In portions of the image sequence having a lower likelihood under the generative model, the playback speed of the image sequence is increased. Conversely, as the likelihood of the current frame under the generative model increases, the playback speed is decreased, thereby providing increased viewing time for portions of the image sequence which are more similar to the query sample," obviously, JOJIC discloses the limitation of "enabling a playback of said digital video at a variable playback speed that may change from segment to segment based on said set of scores," recited in claim 1.

Furthermore, at column 11, lines 50-53, JOJIC states, "[g]iven the query sample, the image sequence is searched to identify those mage frames or frame sequences which are similar to the query sample, within a user adjustable similarity threshold." This passage clearly indicates the "similarity threshold" is adjustable and modifiable. Recall that the "set of scores" (in JOJIC, it should be the set of comparison results described above) is the results of comparing "likelihood" of a segment to the "similarity threshold". Logically, when the "similarity threshold" is adjusted or modified, the comparison results changed accordingly. In other words, the "set of scores" in JOJIC is also adjustable or modifiable.

JOJIC also details the method of adjusting or modifying above at column 28, line 66 - column 29, line 1, where he or she states, "[t]he user can also specify 1530 the aforementioned similarity threshold level, by entering a numeric value." Clearly, in JOJIC, it is the user who modifying the "set of scores" by "inputting" a numeric value.

Therefore, JOJIC also discloses the limitation of "receiving a user input to adjust said playback speed for at least one of said segments by modifying at least one of said set of scores," as recited in claim 1.

And, with a new "set of scores" modified as described, the procedure of varying the playback speed automatically at column 12, lines 8-22 and column 24, lines 10-23, 29-39 is obviously based on this new set of scores assuming that the user modified the similarity threshold, then play back the content. Therefore, JOJIC discloses the limitation of "adjusting said variable playback speed based on said user input."

Additionally, according to JOJIC's teachings, at least described at column 24,

lines 26-29, that says, "the user can still have the control over the fast forward speed,

thus reducing the dependence on the automatic media analysis," and at column 12,

lines 22-24, which says, "at any time, the user is permitted to override this automatic

speed determination by simply selecting the slider bar and either decreasing or

increasing the playback speed, from dead stop to fast forward, as desired," the user

also can adjust said variable playback speed manually by overriding the automatically

set speeds. This disclosure by JOJIC is relevant because of the fact that, regarding the

"reverse playback" feature, the materials in the specification of the current application

that support this feature can only be found on page 13, lines 26-27 in the section of

"Other Aspects and Considerations" with a simple statement of "[i]n an exemplary

implementation, a user may have control to partially or completely <u>reverse</u> the default

variable playback speeds". This disclosure in the specification of the current application

implies manually controlling by user instead of based on the "modified set of scores". If

this is the case, then the feature of "reverse playback" recited in the claim is nothing

else but conventional playback feature that is very common in the art.

But anyway, as described above, JOJIC clearly discloses the feature of

"adjusting said variable playback speed based on said user input."

For ongoing reasons, the Examiner respectfully asserts that JOJIC discloses

every limitation recited in claim 1, except for the feature of "said adjusting including

reversing said variable playback speed based on said user input," as JOJIC only

teaches the adjusting in the case of forward playback and silent regarding to the reverse

playback.

Further, in view of:

(a) reverse playback operation being a very common feature in every media

playback device; and methods or techniques for implementing a reverse playback

operation being not at all novel, and

(b) the core of the current invention being variable speed video playback, in

which playback speed changes from segment to segment based on adjustable set of

scores and being conceptually disclosed by JOJIC,

(c) implementing the methods disclosed and taught by JOJIC with such an

incorporated feature as "reverse playback" having a high expectation of success

because similar calculations and algorithms can be used without any inventive steps (it

is worth observing the fact that, regarding the "reverse playback" feature, the materials

in the specification of the current application that support this feature can only be found

on page 13, lines 26-27 under the section of "Other Aspects and Considerations" with a

simple statement of "in an exemplary implementation, a user may have control to

partially or completely <u>reverse</u> the default variable playback speeds".)

the Examiner strongly believes incorporating a very well known feature that is

also very easily and commonly implemented such as "reverse playback" into the core

teachings of JOJIC and implementing the methods disclosed and taught therein by

JOJIC with such an incorporated feature is nothing else but obvious and well motivated

because the same calculations taught by JOJIC can be implemented to allow users, if

he or she mistakenly missed an interesting segment on the view or just wants to come back two or three previous segments for a second look, to go in the reverse direction and quickly identify the desired segment instead of going all the way to the beginning of the video stream. The proposed incorporating would therefore enhance the interface of the method dramatically.

However, even given the feature of reverse playback being well known, the Examiner relied upon AMIR to teach this feature at column 6, line 66 – column 7, line 4, as an evidence on the record that it has been disclosed in conventional playback devices.

By this analysis, the Examiner strongly believes that such an incorporating is not at all inventive and unpatentable according to 35 U.S.C. §103(a) because all elements recited in the claims are disclosed by prior art and the motivation for combining is obvious.

2. Claims 2-15

Claims 2-15 are dependent on claim 1, their further limitations are also disclosed by prior art. Claims 2-15 are rejected as described.

3. Independent Claims 16, 31, and 33

Independent claims 16, 31, and 33 include similar limitations as discussed above regarding claim 1. Thus, based on the foregoing arguments regarding claim 1, claims 16, 31, and 33 are also rejected.

4. Claims 17-30, 32, and 34-45

Claims 17-30, 32, and 34-45 are dependent on claims 16, 31, and 33, respectively. Based on the foregoing arguments regarding claims 16, 31, and 33 and further limitations recited in claims 17-30, 32, and 34-45 being also disclosed by prior art, claims 17-30, 32, and 34-45 are also rejected as described.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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